

CONCLUSION-DRAWING, COMMUNICATOR CREDIBILITY, AND ANXIETY AS FACTORS IN OPINION CHANGE^{1, 2}

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H OVLAND AND MANDELL (8), investigating the relative effectiveness of communications whose facts and arguments are the same but whose issue-related conclusions are or are not explicitly stated, found an explicit statement of the conclusion more effective than no statement of the conclusion in stimulating opinion change. Thistlethwaite, de Haan and Kamenetzky (19) suggest that greater opinion change might be associated with the explicit communication primarily because it produces greater comprehension of the communicator's position. Although their explicit communication produced greater comprehension of the communicator's position, they found no difference in opinion change between their explicit and nonexplicit groups. However, a direct test of their implicit assumption of a positive relationship between knowledge of the conclusion and opinion change was not made. In view of the inconsistencies between the findings of these two studies, a further examination of the potential effectiveness of conclusion-drawing seemed warranted.

Hovland and Mandell also explored the interaction of source credibility with conclusion-drawing. Their predictions that a non-credible communicator would be more effective using a nonexplicit communication and that a credible communicator would be more effective with an explicit communication were not substantiated. However, they indicate that their induction of source credibility may not have been sufficiently potent. Accordingly,

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a second purpose of the current research was to test these predictions using a different induction procedure.

Since initial position (7, 11, 19) and audience anxiety (9, 10) have been shown to be relevant to opinion change, the interactive effects of both of these predispositional factors with conclusion-drawing were also examined. It was predicted that Ss initially opposed to the communicator's position would be more influenced by a nonexplicit communication whereas Ss initially favorable would be more influenced by an explicit one. With regard to anxiety, it was predicted that Ss high in anxiety would be more influenced by the anxiety allaying communication than would Ss low in anxiety. Furthermore, while it was felt that the explicit communication would be more effective than the nonexplicit one at both anxiety levels, it was predicted that the advantage of the explicit over the nonexplicit communication for Ss high in anxiety would be greater than for those low in anxiety.³

METHOD

Before Measures

The before questionnaire was presented to the Ss ostensibly as an opinion survey conducted by a national research organization. It contained four opinion items on biological warfare and a number of "filler" items on unrelated opinion issues. All items were multiple-choice in form. Also included were 20 items from the Taylor Manifest Anxiety Scale,⁴ presented as a "personal inventory."

Experimental Communications and After Measures

Three weeks after completing the before questionnaire, the Ss read an article on biological warfare presented as part of a Boston University study investigating how well people learn from newspaper articles. The communication, following the "logical" form employed by Hovland and Mandell (8), took the position that biological warfare is not a "super" weapon and that we in the United States can defend against it. In

³ For a more detailed statement of the assumptions underlying these predictions, see (3).

⁴ The twenty items were indicated by Harold P. Bechtoldt as being the most discriminating of all Taylor Scale items. Personal communication, July, 1955.

the explicit version, the final paragraph stated the conclusion that biological warfare is not a "super" weapon for us since we in the United States can defend against it. In the nonexplicit version, in place of the explicit statement of the conclusion, the Ss were urged to draw their own conclusions on the basis of the arguments presented in the article. The two communications differed in no way except for the last paragraph.

One half of the Ss read the explicit communication and one half read the nonexplicit. One half of the Ss in each of these groups had the authorship attributed to the New York Times, and the other half to the Daily Worker. The name of the source was mentioned both at the beginning and at the end of each article. For the Daily Worker, the explanatory phrase "official newspaper of the Communist Party in the United States" was stated at the beginning of the article. For the New York Times, the descriptive phrase "one of the most widely read newspapers in the U. S." was added. The four forms of the communication (conclusion-drawing \times credibility) were distributed in accordance with a sequence of 4 \times 4 Latin Squares so that no two adjacent Ss were assigned to the same experimental condition. The immediate-after questionnaire, in addition to containing the same four opinion items on biological warfare as the before questionnaire, also required the Ss to state the main position of the communicator and to make judgments concerning the article itself. Additional items measured acquisition of the content of the article, recall of source, and concern about biological warfare. Six weeks later the Ss were presented with the identical questionnaire ostensibly to "find out how well people remembered what they had read." After these questionnaires were collected, the Ss were informed of the true nature of the experiment.

Control Group

This group consisted of 36 students who were not exposed to the communications, but who completed appropriate questionnaires at the same times as the experimental groups. The control group was a single class used as a unit.

Subjects

Approximately 400 students, predominantly freshmen, at American International College, Springfield, Massachusetts, were used. The research was carried out in regularly scheduled class meetings in various psychology courses.⁵

Scoring

Each item on biological warfare was scored on a three-point scale. A response to an item indicating that biological warfare was not a "super" weapon was given a score of one; the "uncertain" category, a score of two; and response indicating that biological warfare was a "super" weapon, a score of three. The scores on the four opinion items were summated for each S for

each administration, yielding a theoretical range from 4 to 12. To exhibit change of opinion from any one administration to another, changes in total scores between administrations were computed for each S, a plus change score indicating that the S had changed toward greater acceptance of the position that biological warfare was a "super" weapon. The theoretical range of change scores was from minus eight to plus eight.

The anxiety items were scored by assigning a score of one to a response indicating that the S was anxious and a score of zero to a response indicating that he was not anxious. The Ss scoring in the upper and lower quartiles of the total distribution of anxiety scores were designated as high anxious and those in the middle two quartiles as low anxious.

In previous studies involving the Taylor scale, high scorers have typically been compared with low scorers, the comparison being based on the assumption that the extent of manifest anxiety as measured by the scale is directly and linearly correlated with the level of the internal anxiety drive (16, 17, 18). However, Eriksen (1, 2) has suggested that the Taylor scale may rather be an indicator of the ways in which individuals handle their anxiety, a view congruent with the lack of differential conditioning or learning effects found by some researchers between Ss scoring high and Ss scoring low on the Taylor scale (4, 6, 13, 14, 15). If a distinction is made between level of internal anxiety drive and the overt responses made to the cues from that drive, it thus seems reasonable to assume, following Eriksen, that high and low scores on the Taylor scale reflect differences in modes of response to anxiety rather than in level of drive, and that those scoring in the middle of the distribution derived from the Taylor scale are less anxious than those with high or low scores. This assumption is supported by the finding of a curvilinear relationship between learning and Taylor scores (14, 15), with Ss scoring high or low performing similarly to each other but differently from those scoring toward the middle of the distribution.

RESULTS

Table 1 shows the mean opinion change scores from before to immediate-after for the four experimental groups and the control group. All of the experimental groups showed a significantly greater amount of opinion change than did the control group ($p < .01$, two tails for each comparison). The experimental groups had not differed from the control group initially.

The total group given the explicit treatment showed a tendency toward greater opinion change than the nonexplicit group ($p = .10$, two tails by analysis of variance⁶). There was no significant difference between the credible

⁶ Initial differences in opinion between the explicit and nonexplicit groups suggested an analysis of covariance. Such an analysis could not be undertaken, however, as a result of heterogeneity of regression between the groups.

TABLE 1
MEAN OPINION CHANGE SCORES FROM BEFORE TO IMMEDIATE-AFTER

	Control Group	Experimental Groups			
		EC*	Ec	eC	ec
Means**	+ .44	-2.26	-2.01	-1.68	-1.79
N	36	84	87	85	83

* E indicates explicit statement of conclusion, e nonexplicit; C indicates credible source, c noncredible.

** + indicates movement away from the communicator's position; - indicates movement toward the communicator's position.

and noncredible conditions in amount of opinion change from before to immediate-after.

The first item in the after questionnaire required the Ss to state the communicator's position. In the explicit condition 62 per cent of the Ss reported the communicator's position correctly, compared with only 40.5 per cent of the Ss in the nonexplicit condition ($p < .001$, two tails). Incorrect responses to this question were mainly restatements of some of the general principles and specific considerations that the article suggested were necessary to arrive at a rational decision concerning the dangers of biological warfare.

To test the possibility that the difference in opinion change between the explicit and nonexplicit groups is due to the difference between them in *expressed* knowledge of the communicator's position, the relationship between *expressed* knowledge of the communicator's position and opinion change was examined. No significant difference in opinion change was found between those expressing knowledge of the communicator's position and those not expressing such knowledge.

Initial Position

The Ss were divided at the median (6.47) into "favorable" and "unfavorable" groups in terms of their initial opinion scores. The mean opinion score for the favorables was 5.03; the mean for the unfavorables was 8.91. The unfavorable group showed greater opinion change than the favorable group ($p < .01$, two tails). The smaller opinion change of the favorable group is obviously related to the limited extent of change possible for those closer to the communicator's position. Within the favorable group the explicit treatment was more effective than the nonexplicit ($p = .02$, one tail).

TABLE 2
MEAN OPINION CHANGE SCORES FROM BEFORE TO IMMEDIATE-AFTER FOR Ss INITIALLY HIGH OR LOW IN ANXIETY*

	EC	Ec	eC	ec	All Groups
Means for low anxious Ss	-2.36	-1.74	-1.40	-1.38	-1.73
N	50	38	42	53	183
Means for high anxious Ss	-2.12	-2.22	-1.95	-2.37	-2.15
N	34	49	43	30	156

* High anxiety Ss are those scoring in either the upper or lower quartiles of the distribution of Taylor scale anxiety scores; low anxiety Ss are those scoring in the middle two quartiles.

Within the unfavorable group there were no differences between the explicit and nonexplicit treatments.

Anxiety

The obtained range of scores on the Taylor scale was from 0 to 18 and the obtained mean was 6.04. While the distribution shows some skewness, this is not inconsistent with the distributions obtained by others using the scale on college populations (12, 22). The abridged Taylor scale had an odd-even reliability of .78 using the Rulon formula (5). Table 2 gives the mean opinion change scores from before to immediate-after for high and low anxious Ss by experimental conditions. The total high anxious group shows a greater mean opinion change than does the total low anxious group ($p = .05$, one tail).⁷

The communication was equally effective for all conditions within the high anxious group; no opinion change differences were found between the explicit and nonexplicit and the credible and noncredible conditions. For low anxious Ss, however, the explicit treatment was more effective than the nonexplicit ($p = .03$, one tail).

Acquisition of Content

To check the comparability of the groups with respect to acquisition of content of the communication, fact-quiz scores for the experimental groups were compared. (The fact-

⁷ The separate mean change scores for the upper and lower quartiles of the anxiety distribution were greater than that for the combined middle two quartiles. However, only the Ss in the upper quartile changed significantly more than those scoring in the middle two quartiles.

⁵ The author wishes to thank Dr. Dorothy T. Spoerl and Dr. Charles A. Wells for the use of their classes. In addition, he is grateful to them and to Mr. Norman H. Berkowitz for assistance in administering certain phases of the research.

quiz consisted of six multiple-choice items; the mean for all Ss was 5.09). The Ss reading the explicit communication show a significantly higher mean fact-quiz score than do the Ss reading the nonexplicit communication ($p = .06$, two tails). However, no relationship between acquisition of content (fact-quiz) and opinion change was found.

Judgmental Items

There were no significant differences between the credible and noncredible or the explicit and nonexplicit groups in the proportion of Ss saying that the article was fair or a piece of propaganda. Responses to both of the relevant judgmental items indicated that approximately 70 per cent of all the Ss felt that the article presented a fair treatment of the topic and was not propagandistic in intent.

Recall of Source

An open-ended question asking the S to write the name of the source was included in the after questionnaire. Table 3 shows the percentage of Ss in each experimental group recalling the source correctly. The Ss in the credible condition were more likely to recall the source correctly than were the Ss in the noncredible condition ($p < .02$, two tails). There was no significant difference between the explicit and nonexplicit groups in the proportion of Ss recalling the source correctly. No relationship was found between opinion change and recall of source.

Concern About Biological Warfare

After reading the communication, the Ss were asked two questions regarding their concern about biological warfare ("How concerned are you about biological warfare?") and the importance of the topic to them ("How important is the topic of biological warfare to you?"). Because the responses to the two questions were very highly correlated, the Ss were divided into two groups; those that had re-

TABLE 3
PERCENTAGE OF Ss RECALLING SOURCE CORRECTLY

	Experimental Groups			
	EC	Ec	cC	cc
Percentage	78.5	64.4	76.5	69.9
N	84	87	85	83

TABLE 4
MEAN OPINION CHANGE SCORES FROM BEFORE TO IMMEDIATE-AFTER FOR Ss RELATIVELY HIGH AND LOW IN CONCERN ABOUT BIOLOGICAL WARFARE

Degree of Concern	Experimental Group				All Groups
	EC	Ec	cC	cc	
Highly Concerned (N)	-.64	-1.46	-.82	-1.67	-1.20
Not highly Concerned (N)	-2.51	-2.11	-1.98	-1.76	-2.11
	(73)	(74)	(63)	(59)	(269)

sponded that they were "extremely" or "very" concerned about biological warfare and who also felt that the topic was "extremely" or "very" important to them were designated as highly concerned and all other Ss as relatively nonconcerned. Opinion changes between and within the two groups are shown in Table 4. The Ss who indicated relatively low concern about biological warfare, after reading the communication, showed a greater mean opinion change than those who expressed high concern ($p < .01$, two tails). The two groups did not differ in initial opinions.

The Ss in the nonexplicit treatment were more likely than the Ss in the explicit treatment to say that biological warfare was of concern and importance to them ($p < .01$, two tails).

Delayed-After Results

After six weeks, the mean opinion score of each experimental subgroup mentioned in the analysis of the immediate-after data was still significantly different from the mean of the control group ($p < .01$, two tails). With respect to the comparisons between experimental subgroups, only the difference between the high and low concern groups approaches significance ($p = .11$, two tails). The latter group showed greater retained opinion change than the former.

At this time, the Ss in the credible condition were more likely than those in the noncredible condition to say that the author gave a fair presentation ($p < .05$, two tails); and there was a greater tendency for the Ss who read the nonexplicit communication than for those who read the explicit one to indicate that the author's treatment of the topic was fair ($p < .10$, two tails).

DISCUSSION

The indication that the explicit treatment is somewhat more effective than the nonexplicit tends to support the findings of Hovland and Mandell (8). However, the basis for the potentially greater effectiveness is not certain. Under certain conditions, knowledge of the communicator's position may be an important factor as Thistlethwaite, de Haan and Kamenezky (19) suggest. In the present research, however, no relationship was found between expressed knowledge of the communicator's position and opinion change. This finding is consistent with a conceptualization of opinion change as a continuous process in which the S, while reading the communication, is being affected by many content cues. While some people may not be able to order verbally everything they have read in a communication in a fully organized, meaningful, and closed form, they are apparently able to get enough of the "drift" of the communication to be as influenced by it as are others who can explicitly express the communicator's position.

To account for the superiority of the explicit condition over the nonexplicit in changing opinions, different assumptions are needed. Given a fairly complex communication, it is quite likely that the person, while reading, does not adequately perceive the logical organization of the content or arrange the data and arguments to form the implied syllogistic pattern represented by the current communication. The more complex the communication, the more likely he will have difficulty in grasping this informative patterning. Reading the conclusion may instigate awareness of the relationship existing between the preceding factual and logical groundwork and the basic point of the message. Thus, the explicit presentation of the conclusion may serve essentially to unify the body of the communication so that it becomes more clearly related to the conclusion. The impact of this unified, better understood communication is likely to be greater than in the nonexplicit condition where the person, if he has inferred the desired conclusion, may well be less certain of its appropriateness and validity. While it is probable that the person who arrives at the appropriate conclusion on his own achieves a degree of unification in the content of the message, the attendant uncertainty should serve to reduce

the over-all impact of the communication. Unfortunately, no measure of certainty was included in this study.

If the recipient of a communication about a potentially anxiety arousing topic is uncertain concerning its anxiety allaying conclusion, however, somewhat greater residual concern would be expected than if he were more certain about it. In line with this expectation, the data show that Ss in the nonexplicit condition evidenced more concern than the Ss in the explicit condition. If uncertainty of the correct conclusion underlies residual concern, then less opinion change may be expected among the highly concerned Ss than among those not as concerned. Again, the data bear this out (see Table 4).

The lack of opinion change differences between the credible and noncredible conditions may have been due to a weakness in the induction of the variable, but this possibility seems unlikely. It had not been considered necessary to obtain measures of the credibility attributed to the two sources by the Ss, since previous experience with other Ss indicated that the New York Times and the Daily Worker were perceived as differing greatly in credibility. To heighten this difference, qualifying phrases amplifying the credibility or lack of credibility were attached to the names of sources, it will be remembered, in the present study.

The results for initial position were possibly complicated by the generally favorable initial opinions of all the Ss. This fact may have additional consequences if it is assumed, as seems reasonable, that persons form an accurate impression of a communicator's position more readily when it is discrepant from their own. Here, even in the nonexplicit condition, Ss may be able to sense the main tenor of the communication because its message is so strongly opposed to their own position. But when the position of the S is not very discrepant from the communicator's, a finer discrimination is required. Thus, it might be expected that an explicit statement of the appropriate conclusion would result in greater opinion change for the initially favorable Ss than would no explicit statement.

The finding that Ss high in anxiety were more influenced by the communication than were those low in anxiety is consistent with the results of previous research (20, 21) in which

congruency between relevant response predispositions and the opinion response urged by the communicator were found to facilitate communication effectiveness.

SUMMARY

The study was designed to explore the simple and interactive effects of conclusion-drawing, communicator credibility, initial position, and anxiety. A before-after design was employed. The Ss' initial positions on biological warfare were assessed and they were given the Taylor Manifest Anxiety Scale. Three weeks later all Ss read an article on biological warfare which took the position that biological warfare was not a "super" weapon. This was followed immediately by another opinion questionnaire containing opinion items, items testing retention of content of the communication and items pertaining to the Ss' judgments of various aspects of the communication. Six weeks later all Ss took identical questionnaires. A control group that was not exposed to the experimental communication but took all of the questionnaires was employed. Some of the major findings are: (a) No relationship was found between *expressed* knowledge of the communicator's position and opinion change; (b) the explicit treatment was somewhat more effective in changing opinions than was the nonexplicit; (c) no difference was found in opinion change between the groups given credible and noncredible treatments; (d) the opinion change of Ss high in inferred anxiety was greater than those low in anxiety; and (e) Ss high in residual concern changed less in opinion than Ss not high in residual concern.

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